

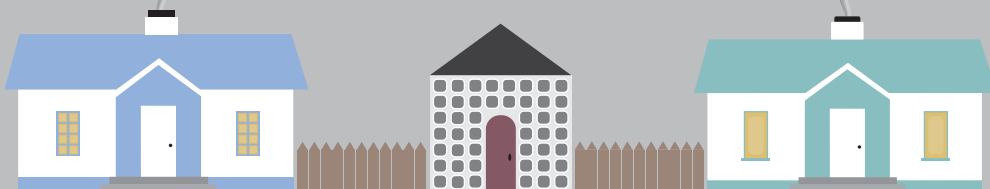
Otago Regional Council Summary Report: *Air Quality State and Trends*

Our health and the natural environment depend on clean air, which Otago enjoys for most of the year.

Winter is **different**.

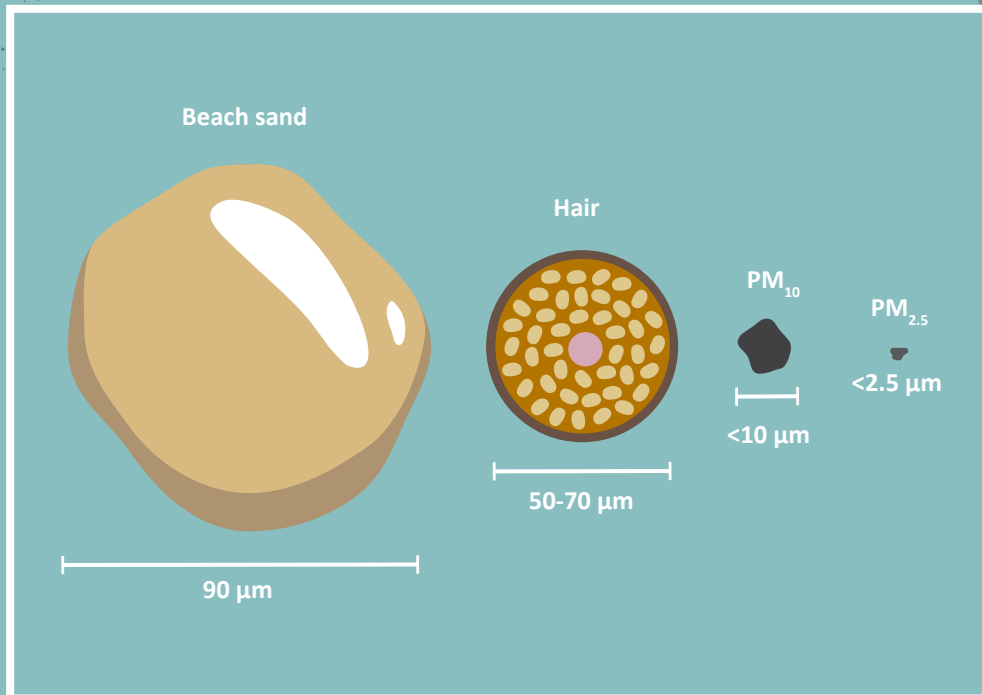
Air quality plummets in many towns, often failing national standards, and some Otago residents regularly breathe New Zealand's most polluted air.

Read on to learn where those emissions are coming from and what we can do about them in this summary of the **2010-2019 State and Trends report**.



What we monitor

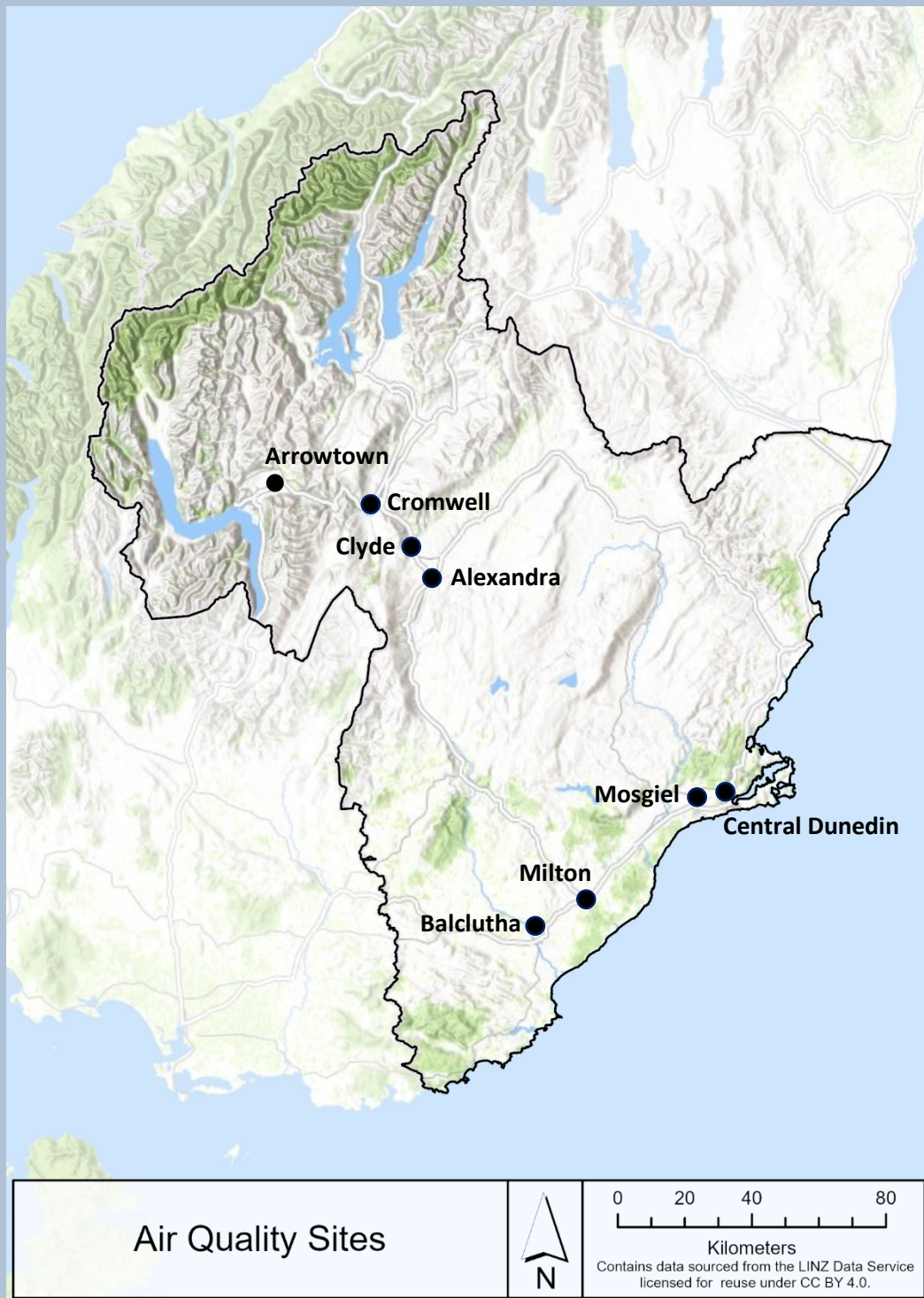
Air carries lots of fine material that we can't see. This 'particulate matter' (PM) comes in many different sizes,



PM₁₀ produced by human activity is one of the most concerning air pollutants throughout New Zealand. Otago's main source of PM₁₀ is burning wood to heat our homes. To improve our air quality and keep warm, we need to insulate and burn better.



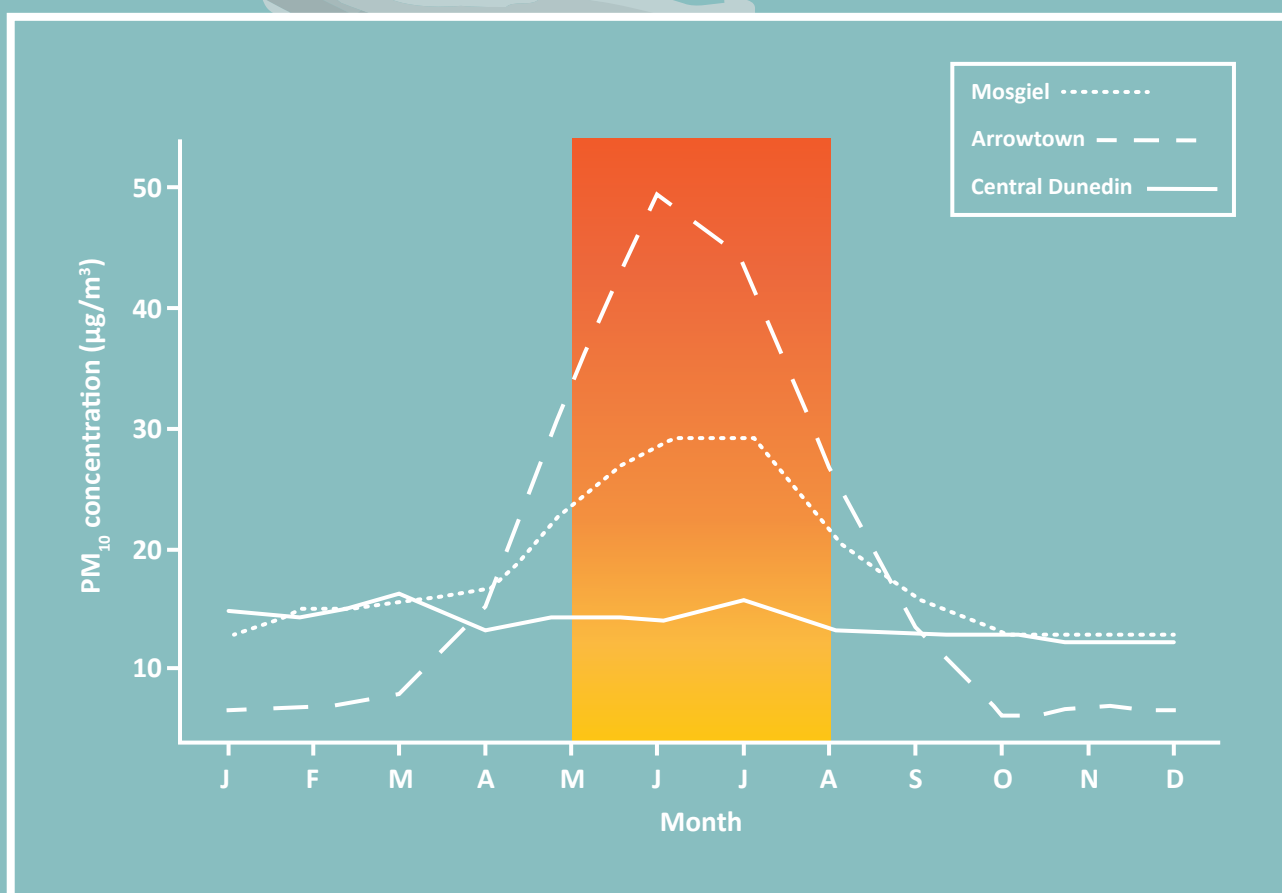
Where we monitor



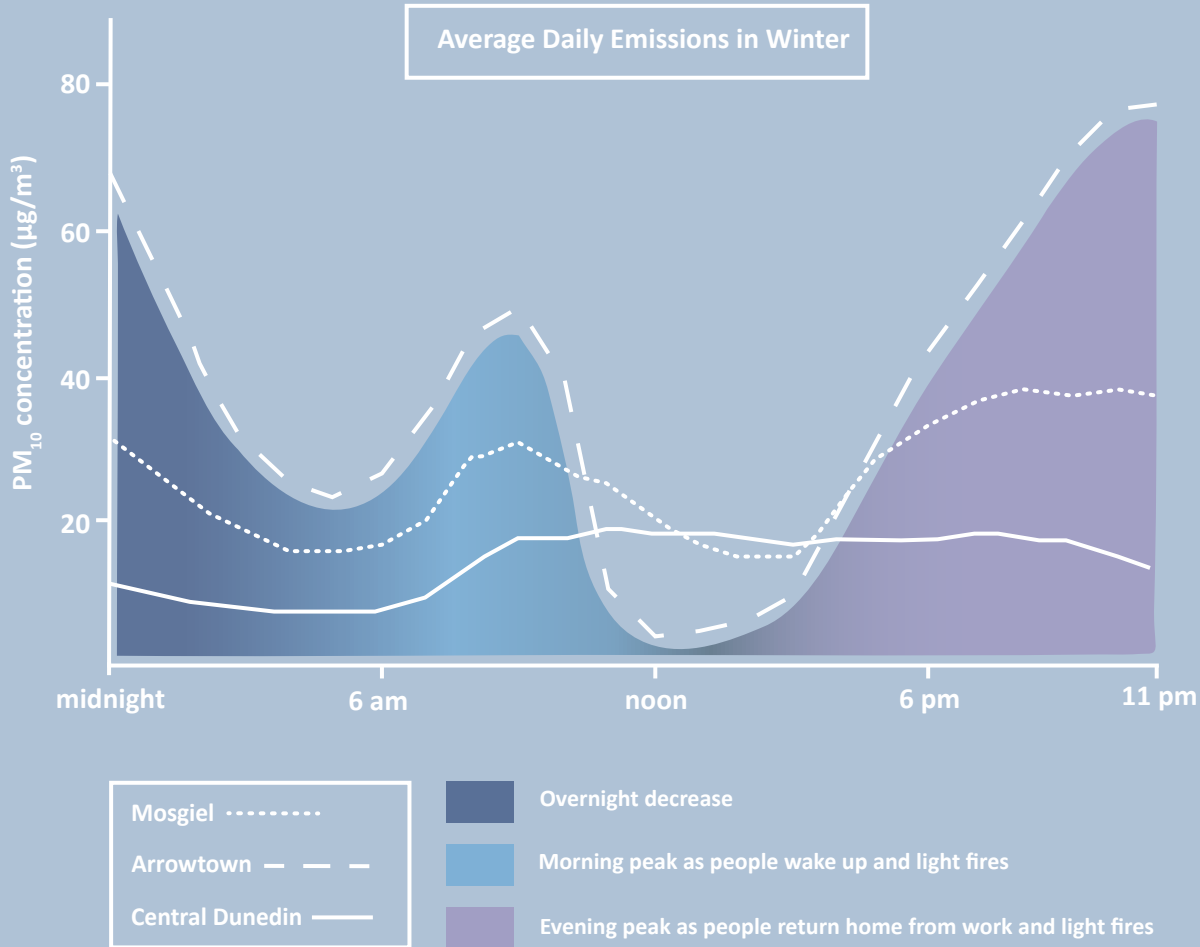
The Otago Regional Council has an air quality monitoring site in each of these areas. We use that data to track how much PM_{10} is in the air and whether it complies with the National Environmental Standards for Air Quality (NESAQ).

Results

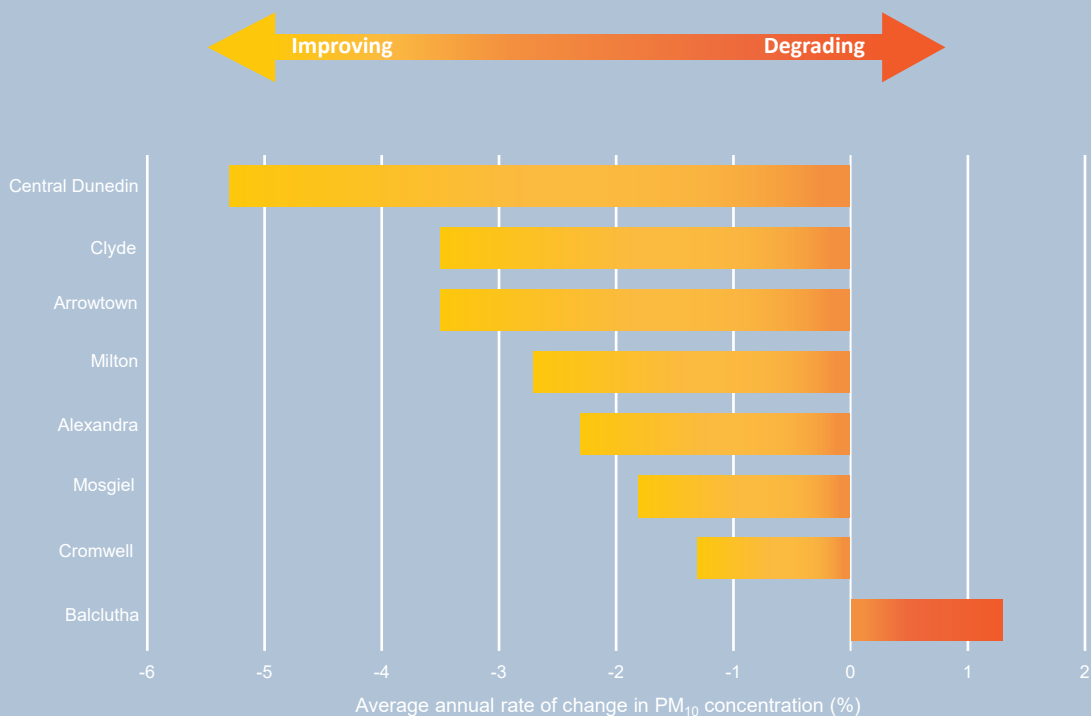
The graph below shows PM_{10} concentrations increasing dramatically during late autumn and winter in Arrowtown and Mosgiel. This pattern is seen at all of our monitoring sites except Central Dunedin (you can view data for other Otago locations at www.lawa.org.nz).



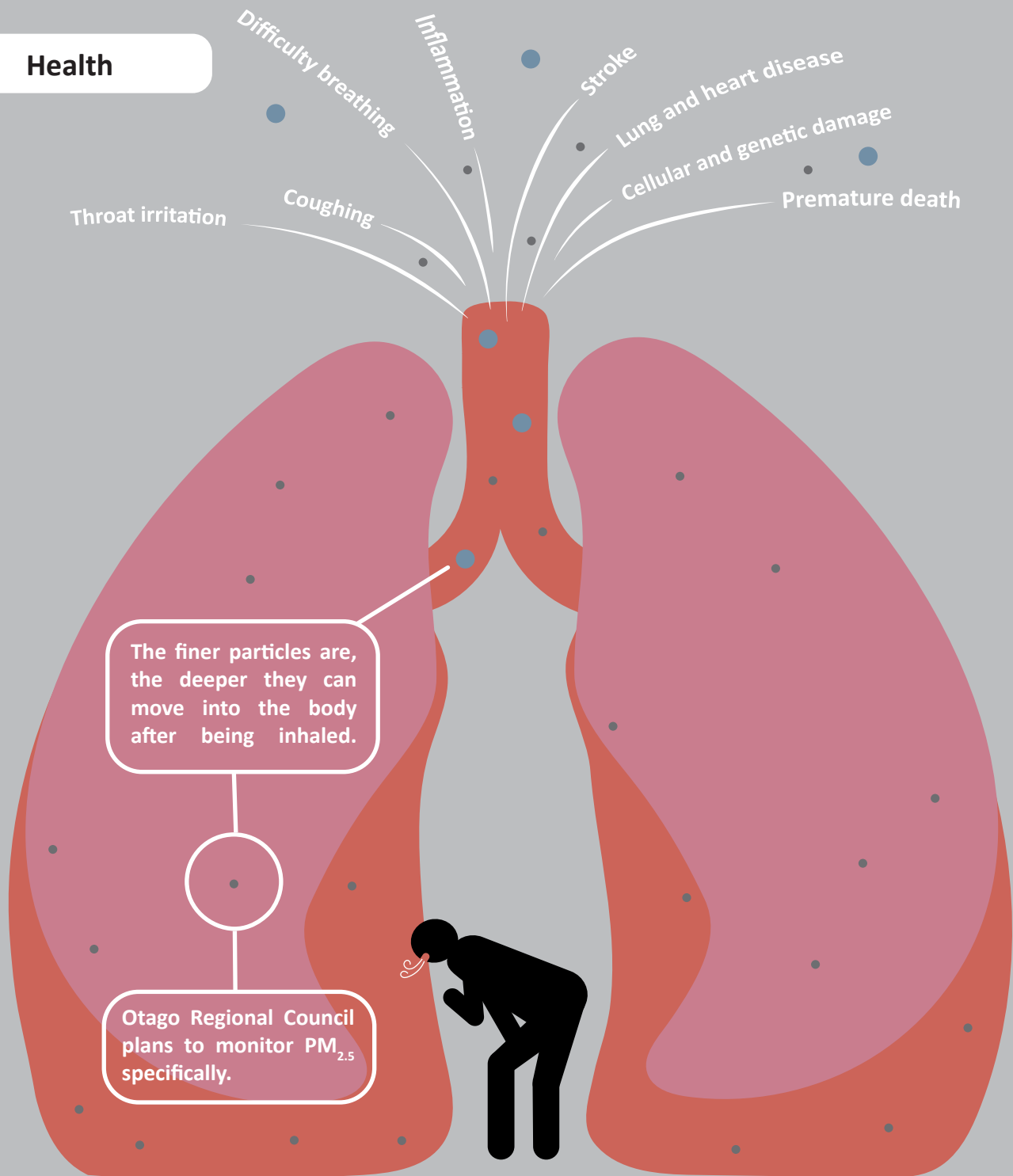
May to August is the coldest time of year and we need to heat our homes. Doing so releases PM_{10} into the air and contributes to its concentration peaking in winter. As Central Dunedin has more mixed emissions sources and strong coastal winds that blow pollutants away, its PM_{10} level doesn't change much from month to month.



Over a ten-year monitoring period, all sites showed an improvement in PM₁₀ concentration, apart from Balclutha.



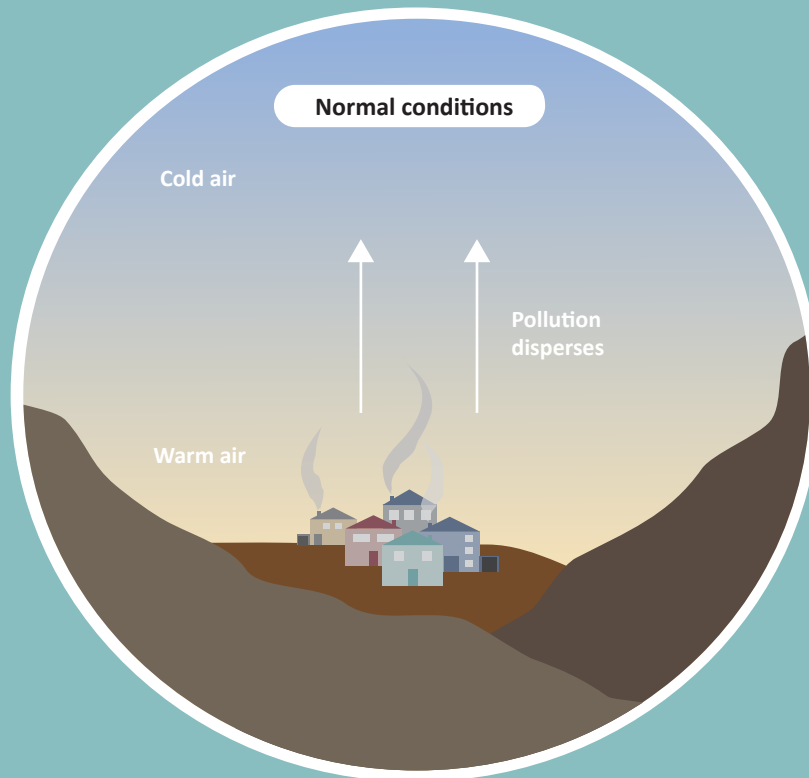
Health



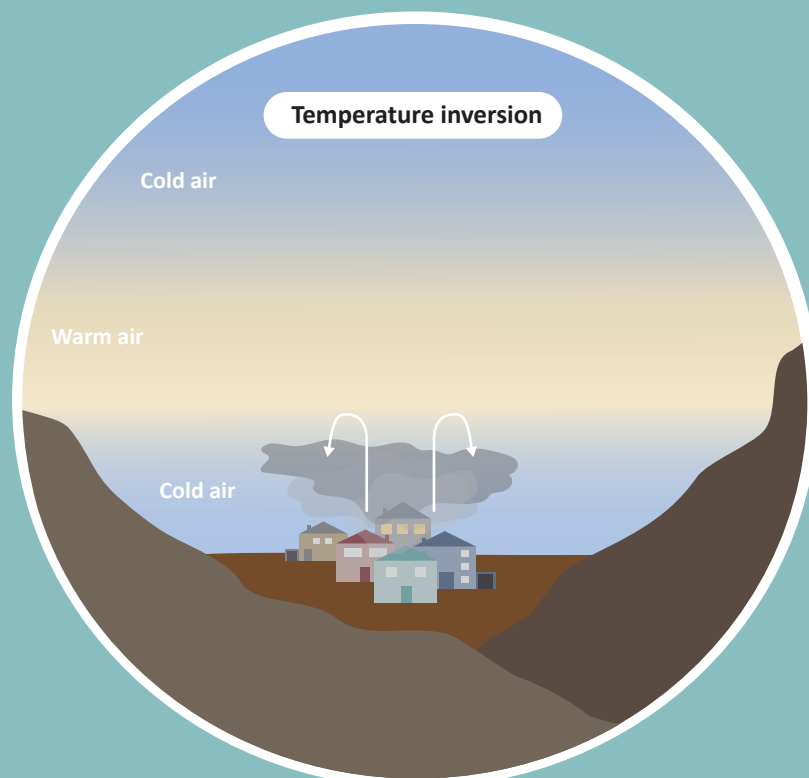
Poor air quality affects people differently. The amount of harm depends on things like exposure, age, pre-existing medical conditions and ethnicity. Chimney smoke hanging over a street could make one person clear their throat, send an elderly resident into a coughing fit and set off an asthma attack for someone else.

Air quality also influences the way we live from day-to-day. When it's bad, we can find ourselves avoiding certain places or activities. You might not be able to open windows, hang the washing outside, or take that evening walk. It can be isolating – especially for vulnerable people who have to be more cautious.

Weather and landscape



Topography and weather conditions influence how pollutants disperse, which means the same volume of emissions can have a different impact on air quality across Otago and throughout the year. In Arrowtown, for example, ground-level temperatures can drop quickly during winter and cool the nearby air, creating a cold, dense layer that traps pollution below the warmer air above it.



Te Ao Māori

All life and the natural environment share the same origin in Te Ao Māori. This whakapapa connection means that air is a taoka (treasured resource). Pollution degrades its mauri (vital essence) and affects other taoka that depend on it, such as indigenous biodiversity. The takata whenua of Otago, Kāi Tahu whānui, believe that such taoka must be passed intact to the next generation, and that any deterioration should be remedied.

What we can do

As the weather and the landscape are outside our control, air quality can only be improved by lowering emissions. If you use a wood burner, make sure you're getting the most out of it by following the simple steps below (visit the ORC website for demonstrations and extra information).

Get your chimney cleaned every year.

Ensure good air flow to the fire, especially upon start-up, and don't damp it down overnight.

Burn only dry, untreated wood and store it under cover with good air flow to the sides.

